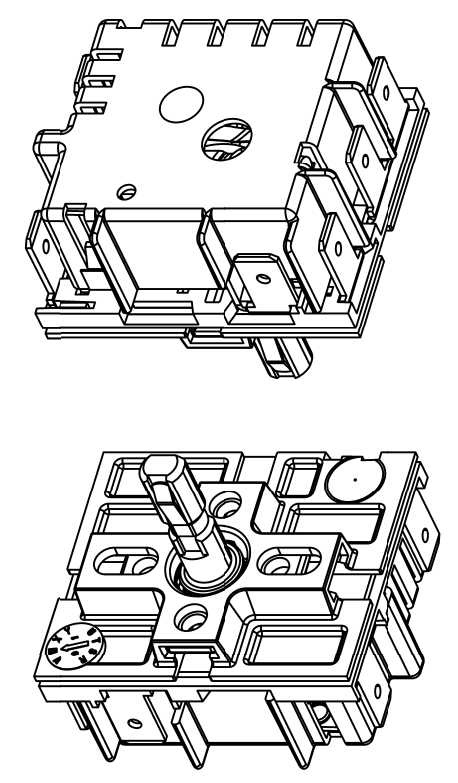
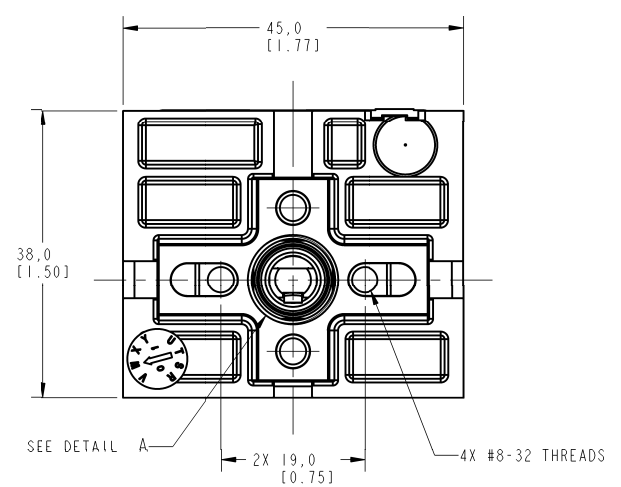
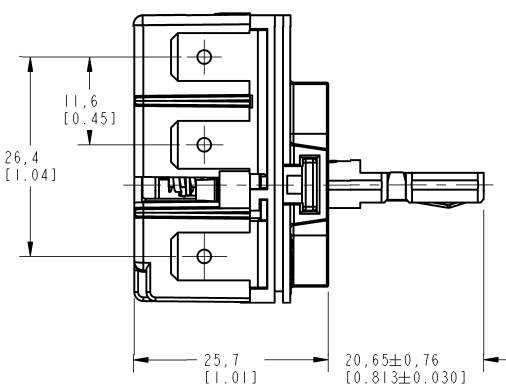
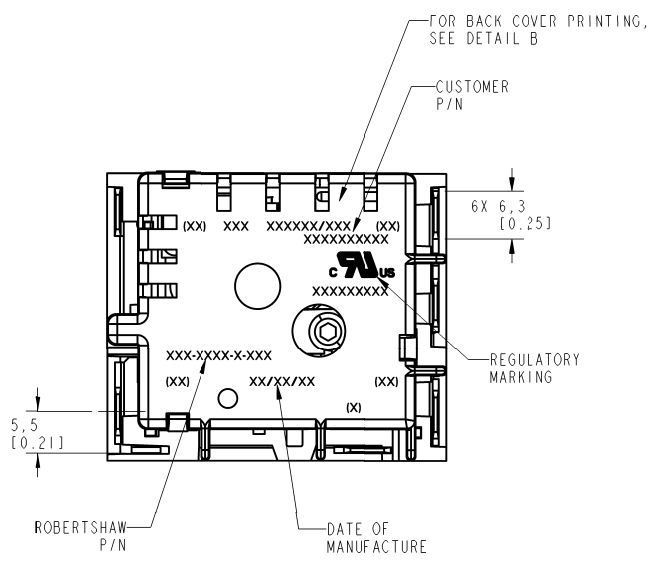
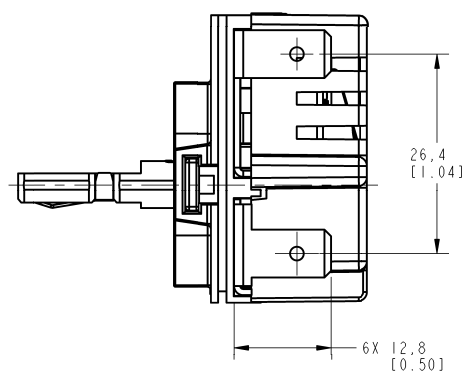
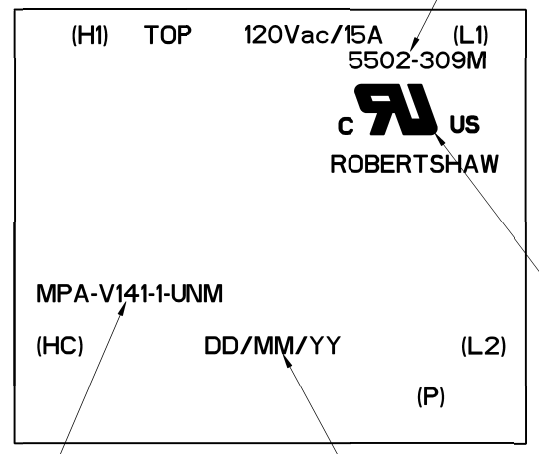
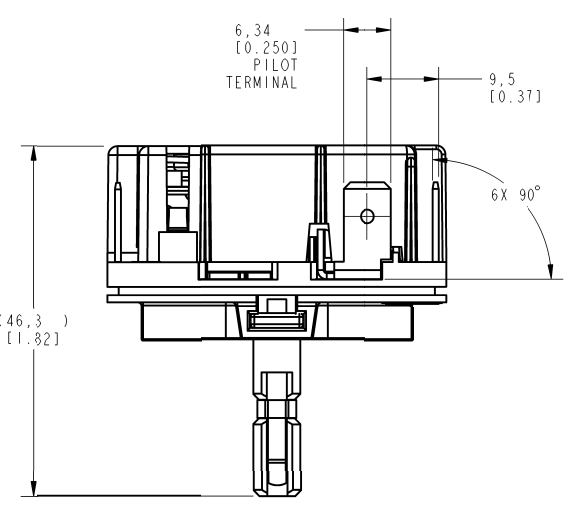
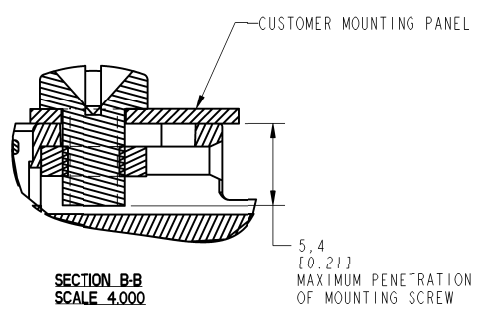


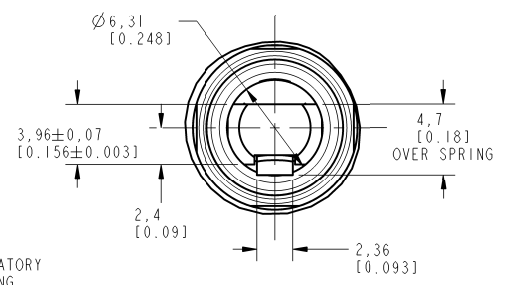
ENERGY REGULATOR					
CUSTOMER PART NUMBER	ROBERTSHAW PART NUMBER	BENT TERMINALS	STRAIGHT TERMINALS	SHAFT LENGTH DIM "L"	SHAFT TYPE
5502-309M	MPA-V141-1-UNM	NO	YES	20.65 [0.813]	"K" STYLE



3-D ISO VIEWS



BACK COVER PRINTING DETAIL  
DETAIL B  
SCALE 4.000



"K" STYLE SHAFT  
DETAIL A  
SCALE 4.000

**CHARACTERISTICS:**

- TYPE: SINGLE ELEMENT
- VOLTAGE: 120VAC, MAX 15 AMPS
- PILOT: NON-ISOLATED
- SHAFT: NON PUSH-TO-TURN, ZAMAK
- SHAFT PROFILE: K TYPE SHAFT
- COVER COLOR: CREAM COVER
- CALIBRATION: 45° CCW, 2-9%

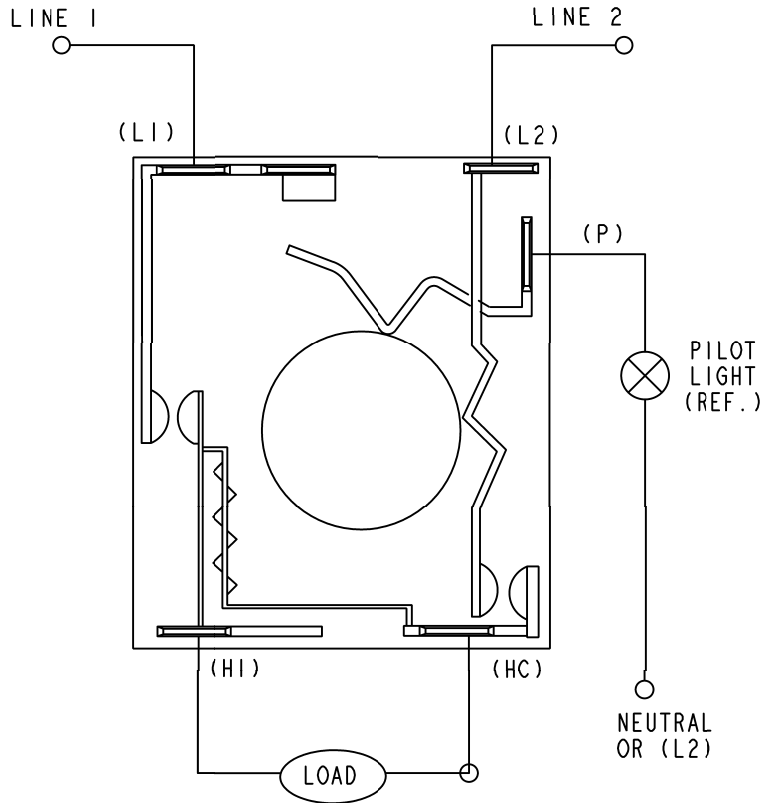
UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN MM. ANY DIMENSIONS SHOWN IN BRACKETS [ ] ARE IN INCHES AND ARE FOR REFERENCE ONLY.

TOLERANCE NOTE:  
1 DECIMAL PLACE X.X ± 0.76 [0.03]  
2 DECIMAL PLACES X.XX ± 0.381 [0.015]  
ALL ANGLES X ± 2°

APPLICATION RESPONSIBILITY		RELEASED TO PRODUCTION	
REV	ZONE	DESCRIPTION OF REVISION/EST	DATE/ECH
A			13SEP18 IG
			ECN76934 TA

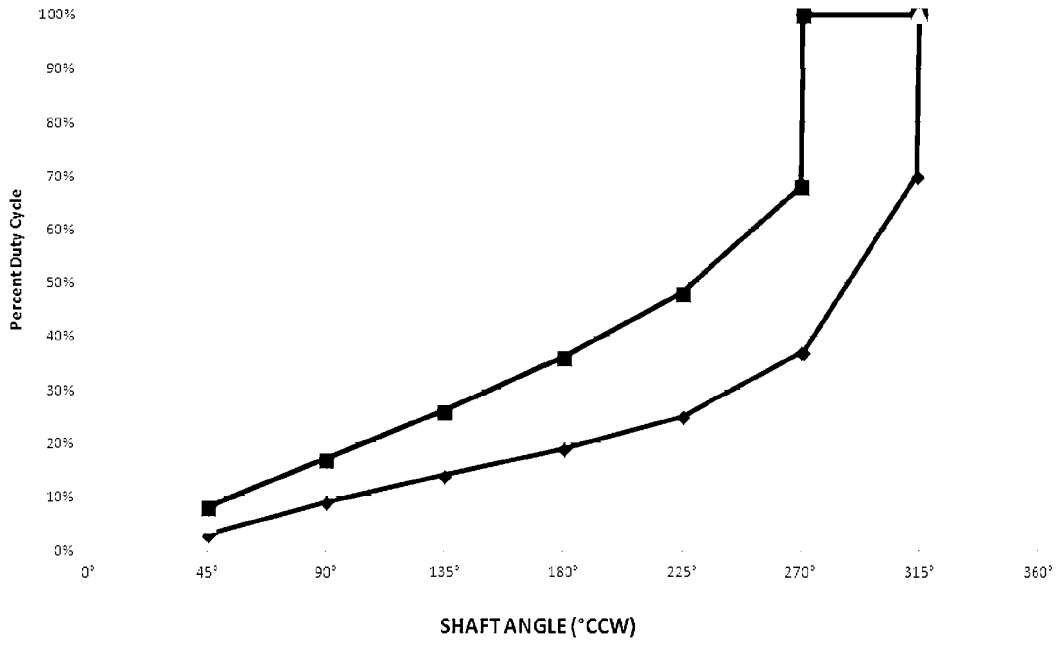
<p>THIS DRAWING AND ALL SUPPORTING MODELS SHALL CONFORM TO ES-10003 AND ES-10004</p> <p>NO DIMENSIONAL PROJECTION</p> <p>3D PRO-E CAD DRAWING</p> <p>NO MANUAL CHANGES</p>	<p>UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN MILLIMETERS AND ARE FOR REFERENCE ONLY.</p> <p>TOLERANCES UNLESS OTHERWISE SPECIFIED:</p> <p>2 PLACE DECIMAL X.XX ± 0.03 IN. ( ± 0.76 MM)</p> <p>3 PLACE DECIMAL X.XXX ± 0.015 IN. ( ± 0.381 MM)</p> <p>ALL ANGLES X ± 2°</p> <p>NOTICE TO PERSONS RECEIVING THIS DRAWING AND/OR TECHNICAL INFORMATION: ALL TECHNICAL AND OTHER INFORMATION PROVIDED HEREIN AND HEREIN COLLECTIVELY BELONGS TO ROBERTSHAW AND IS THE PROPERTY OF ROBERTSHAW AND WILL BE PROMPTLY RETURNED TO ROBERTSHAW UPON COMPLETION OF THE SPECIFIC PROJECTS FOR WHICH IT WAS LOANED.</p>	<p>CUSTOMER NAME: UNILINE</p> <p>DATE: 05JUL18</p> <p>DRAWN BY: I. GARCIA</p> <p>CHECKED BY: T. AGUILAR</p> <p>DESIGN APPROVED BY: P. FAWKEN</p> <p>ENGINEERING APPROVED BY: P. FAWKEN</p> <p>DATE: 05JUL18</p> <p>DESIGN CONTROL: ITASCA</p> <p>EXPERIMENTAL NUMBER: N/A</p> <p>DO NOT SCALE THIS DRAWING</p> <p>DRAWING SCALE: 2.000</p>	<p>ROBERTSHAW</p> <p>1122 AMPLINGTON PARKWAY TOLSON, CALIFORNIA 94515-1000 U.S.A.</p> <p>DRAWING TITLE: SINGLE M-SERIES SWITCH</p> <p>PRODUCT MODEL: M-SERIES</p> <p>MATERIAL: N/A</p> <p>DRAWING NUMBER: MPA-V141-1-UNM-S</p>
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### WIRING DIAGRAM



### ELEMENT SCHEMATIC

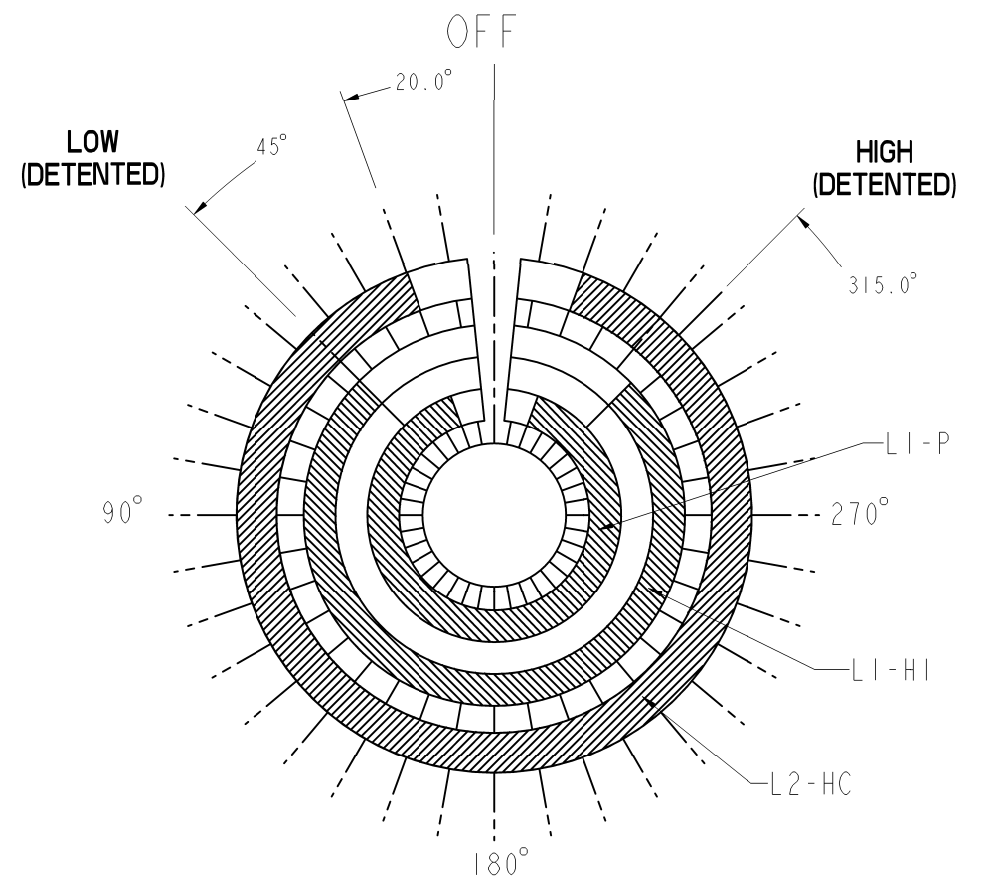
### TYPICAL OUTPUT GRAPH



NOTES:

- ROBERTSHAW CONTROLS MAINTAINS THE RIGHT TO CHANGE ANY SPECIFICATION WITHOUT NOTICE.
- ANY MODIFICATIONS MADE WITHOUT EXPRESS WRITTEN APPROVAL BY ROBERTSHAW CONTROLS WILL VOID WARRANTY.
- REFER TO SHAFT POSITION KEY FOR OFF POSITION.
- ALL TERMINALS ARE STANDARD QUICK CONNECT AND CONFORM TO IEC 1210 AND NEMA DC2.
- ALL SHAFT ANGLES ARE  $\pm 3^\circ$ .
- DIAL SHAFT TORQUE IS 0.1-0.4 Nm.
- MAXIMUM TORQUE OF 12 IN-LB MAY BE APPLIED TO MOUNTING SCREWS.
- FOR PUSH-TO-TURN MODELS ONLY: MINIMUM TORQUE FOR FAILURE OF PUSH TO TURN MECHANISM IS 3.39 Nm (30 IN\*LBS). MINIMUM PUSH FORCE REQUIRED TO UNLATCH DIAL SHAFT IS 908 GRAMS.
- ALL CIRCUITS RATED AT 240 VAC, 15 AMPS EXCEPT PILOT WHICH IS 0.5 AMPS.
- AMBIENT OPERATING TEMPERATURE 0° TO 125° C.
- TEST AND APPROVED TO:
  - ENCEC05
  - UL 873 FILE # E112536
- ACTION TYPE IB (IEC 730) NORMAL POLLUTION SITUATION.
- CALIBRATED AT SIMMER POSITION, SEE SHEET #1.
- PROTECTED BY THE FOLLOWING PATENTS:
  - UNITED STATES NO. 6,287,154
  - EUROPEAN PATENT NO. 954,872
  - NEW ZEALAND PATENT NO. 336,614
  - AUSTRALIAN PATENT NO. 742,983
  - OTHER PATENTS PENDING.
- THESE PARTS & ASSEMBLIES MUST BE COMPLIANT WITH THE EUROPEAN UNION DIRECTIVE 2002/95/EC (RoHS DIRECTIVE; 27 JANUARY 2003), AS AMENDED, AT THE TIME OF ANY ORDER.

### SWITCHING DIAGRAM (TOLERANCE $\pm 3^\circ$ )



□ LIGHT AREA INDICATES TRANSITION FROM ON TO OFF OR VICEVERSA  
 ▨ DARK AREA INDICATES CONTACTS CONTINUOUSLY MADE IN THAT POSITION.

SEE TOLERANCE NOTE ON PAGE #1

#### APPLICATION RESPONSIBILITY

THIS DRAWING AND ALL SUPPORTING MODELS SHALL CONFORM TO ISO 9001 AND ISO 14001.	DIMENSIONS UNLESS OTHERWISE SPECIFIED, DIMENSIONS ARE GIVEN IN MILLIMETERS AND ARE FOR REFERENCE ONLY.	TOLERANCES UNLESS OTHERWISE SPECIFIED: 2 PLACE DECIMALS: X.XX ± 0.03 IN / 0.76 MM 3 PLACE DECIMALS: X.XXX ± 0.015 IN / 0.38 MM ALL ANGLES: X ° ± 3°	NOTICE TO PERSONS RECEIVING THIS DRAWING AND/OR TECHNICAL INFORMATION: ALL TECHNICAL AND OTHER INFORMATION PROVIDED HEREIN AND HEREON IS COLLECTIVELY REFERRED TO AS "ROBERTSHAW PROPERTY" AND IS THE PROPERTY OF ROBERTSHAW. IT IS TO BE USED ONLY FOR THE PURPOSES SPECIFIED AND NOT BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY MANNER WITHOUT THE WRITTEN PERMISSION OF ROBERTSHAW. ROBERTSHAW PROPERTY MAY NOT BE REPRODUCED OR USED FOR ANY PURPOSE WITHOUT THE WRITTEN PERMISSION OF AN AUTHORIZED REPRESENTATIVE OF ROBERTSHAW AND MUST BE PROMPTLY RETURNED TO ROBERTSHAW UPON COMPLETION OF THE SPECIFIC PROJECTS FOR WHICH IT WAS LOANED.	CUSTOMER NAME UNILINE	RELEASED TO PRODUCTION 13SEP18 16:00 ECN76934 TA
				DRAWN BY T. GARCIA	DATE 05JUL18
3D PRO-E CAD DRAWING NO MANUAL CHANGES	DESIGN CONTROL ITASCA	EXPERIMENTAL NUMBER N/A	DO NOT SCALE THIS DRAWING DRAWING SCALE 1:1000	DRAWING TITLE SINGLE M-SERIES SWITCH	DRAWING NUMBER MPA-V141-1-UNM-S